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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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EXAMINER	
SAMS, MATTHEW C	
ART UNIT	**PAPER NUMBER**
2617	

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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	10/007,992	DYBDAL ET AL.	
	Examiner	Art Unit	
	Matthew C. Sams	2617	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *30 May 2007*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-8,10-20 and 22-32* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☐ Claim(s) *1-8, 10-15, 20, and 22-32* is/are rejected.

7)☒ Claim(s) *16-19* is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

Response to Amendment

1. This office action is in response to the amendment filed on 5/30/2007.

Response to Arguments

2. Applicant's arguments filed 5/30/2007 have been fully considered but they are not persuasive.

3. In response to the applicant's argument regarding claim 1 that "Ibanez-Meier does not disclose or suggest individually identifying, or differentiating in any way, between possible different obstructions" (Page 7), the examiner disagrees.

Ibanez-Meier clearly differentiates between the different obstructions by using a scale to rank "how shadowed a signal is at a particular point" (Col. 5 lines 9-17) and "where it is shadowed by trees or shrubbery, and where it is blocked as a result of mountains and structures such as buildings or overpasses". (Col. 4 lines 31-40) Therefore, Ibanez-Mier teaches a method and apparatus for responding to a blockage environment in the UHF band that includes identifying the individual component impairments of a total link degradation.

4. In response to the applicant's argument regarding claim 2 that Sherman "does not appear to disclose or suggest that "the CW tone is out of the communications bandwidth" (Page 7), the examiner disagrees.

It is obvious to one of ordinary skill in the art that if a mobile device in Sherman's disclosure tried to communicate using the same frequency that the satellite is

broadcasting a pilot signal upon, the pilot signal would appear as a constant noise source to a third device trying to receive the mobile transmission. Therefore, since no mobile device would try to transmit on the frequency of the pilot signal, a pilot signal transmission qualifies as a CW tone out of the communication bandwidth.

5. In response to the applicant's argument regarding claims 10 & 20 that "Ibanez-Meier does not appear to provide a real time measure of impairments" (Page 8), the examiner disagrees.

Ibanez-Meier teaches updating the blockage profile "because the local environmental obstructions at the site at which terminal 16 resides could change" (Col. 7 lines 62-64), "the terminal blockage profile could require continuous or frequent updating if the terminal is continuously or intermittently mobile" (Col. 7 lines 65-67) and "the system response is not limited to determining when hand-off should occur" (Col. 11 lines 5-7) which teaches one of ordinary skill in the art that the algorithm is running in real time and constantly.

6. In response to applicant's argument regarding claims 12, 13, 23 & 24 that the references fail to show certain features of applicant's invention, it is noted that the features upon which applicant relies (i.e., *external* interference and noise sources) are not recited in the rejected claim(s). Although the claims are interpreted in light of the specification, limitations from the specification are not read into the claims. See *In re Van Geuns*, 988 F.2d 1181, 26 USPQ2d 1057 (Fed. Cir. 1993).

7. The rejections to claims 11, 14, 15, 26 and 27 are maintained in view of the further explanations above.

8. In response to applicant's argument regarding claims 31 and 32 that the references fail to show certain features of applicant's invention, it is noted that the features upon which applicant relies (i.e., These delayed multipath components indicated by the cross correlation provide the tap settings for the adaptive rake receiver used to negate multipath (Page 9)) are not recited in the rejected claim(s). Although the claims are interpreted in light of the specification, limitations from the specification are not read into the claims. See *In re Van Geuns*, 988 F.2d 1181, 26 USPQ2d 1057 (Fed. Cir. 1993).

Claim Rejections - 35 USC § 103

9. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

10. Claims 1-8, 10, 12-13, 20, 22-25 and 28-30 are rejected under 35 U.S.C. 103(a) as being unpatentable over Sherman et al. (US-6,021,309 hereinafter, Sherman) in view of Ibanez-Meier et al. (US-5,946,603 hereinafter, Ibanez-Meier).

Regarding claim 1, Sherman teaches determining the communication link quality employing beacon signals (Col. 15 lines 42-52) comprising the steps of:

equipping a plurality of communication satellites with beacon transmitters that generate beacon signals including a continuous wave (CW) tone and a coded signal

that are different for each of the communications satellites; (Col. 15 lines 46-52 and Col. 18 lines 57-63)

providing a communications device, that is capable of establishing UHF communications links with the communications satellites, with means for receiving and processing the beacon signals to determine the quality of the UHF communications links; (Col. 2 lines 14-26 and Col. 26 line 9 through Col. 27 line 65) and

providing the communications device with means for communicating to a user information pertaining to the quality of the UHF communication links. (Col. 26 line 9 through Col. 27 line 65)

Sherman differs from the claimed invention by not explicitly reciting identifying individual component impairments of a total link degradation.

In an analogous art, Ibanez-Meier teaches a method and apparatus for responding to a blockage environment in the UHF band (Col. 2 lines 19-30) that includes identifying the individual component impairments of a total link degradation. (Col. 4 line 30 through Col. 6 line 44) At the time the invention was made, it would have been obvious to one of ordinary skill in the art to implement the multiple satellite communication network of Sherman after modifying it to incorporate responses to blockage environments of Ibanez-Meier. One of ordinary skill in the art would have been motivated to do this since the service provided by non-geosynchronous satellites varies due to the position of the mobile user as well as the satellite moving across the sky. (Ibanez-Meier Col. 2 line 31 through Col. 3 line 21)

Regarding claim 2, Sherman in view of Ibanez-Meier teaches the coded signal is within a communications bandwidth employed by the communications satellite; (Sherman Col. 4 lines 18-32 *e.g.* CDMA pilot signal) and

the CW tone is out of the communications bandwidth. (Sherman Col. 4 lines 40-51 and Col. 15 lines 42-52)

Regarding claim 3, Sherman in view of Ibanez-Meier teaches the communication device comprises a transponder. (Sherman Col. 1 lines 19-25)

Regarding claim 4, Sherman in view of Ibanez-Meier teaches the communication device comprises at least one of a mobile voice communicator and a mobile data communicator. (Sherman Col. 19 lines 48-50)

Regarding claim 5, Sherman in view of Ibanez-Meier obviously teaches the means for receiving and processing the beacon signals comprises a processor. (Ibanez-Meier Fig. 13)

Regarding claim 6, Sherman in view of Ibanez-Meier obviously teaches the means for receiving and processing the beacon signals comprises one or more beacon receivers. (Sherman Col. 15 lines 42-52)

Regarding claim 7, Sherman in view of Ibanez-Meier obviously teaches one or more beacon receivers comprise a continuous wave tone beacon receiver. (Sherman Col. 15 lines 42-52)

Regarding claim 8, Sherman in view of Ibanez-Meier obviously teaches that one or more beacon receivers comprise a coded signal beacon receiver. (Sherman Col. Col. 4 lines 18-32)

Regarding claim 10, Sherman in view of Ibanez-Meier teaches the means for communicating information provides a real time indication of link quality. (Ibanez-Meier Col. 7 line 62 through Col. 8 line 17 and Col. 9 line 61 through Col. 10 line 11)

Regarding claim 12, Sherman in view of Ibanez-Meier teaches the information includes noise information. (Sherman Col. 15 lines 29-52)

Regarding claim 13, Sherman in view of Ibanez-Meier teaches the information includes interference information. (Sherman Col. 15 lines 29-52)

Regarding claim 20, the limitations of claim 20 are rejected as being the same reasons set forth above in claims 1 and 10.

Regarding claim 22, Sherman in view of Ibanez-Meier teaches the link impairment factors include a propagation loss factor. (Sherman Col. 4 lines 17-31)

Regarding claim 23, Sherman in view of Ibanez-Meier teaches the link impairment factors include an interference factor. (Sherman Col. 6 lines 3-12)

Regarding claim 24, Sherman in view of Ibanez-Meier teaches the link impairment factors include a noise factor. (Sherman Col. 6 lines 3-12)

Regarding claim 25, Sherman in view of Ibanez-Meier teaches the processor is programmed to process data perftaining to variations in measured signal levels of the beacon signals to determine one or more link impairment factors. (Sherman Col. 23 lines 37-49 and Ibanez-Meier Col. 4 line 30 through Col. 6 line 44)

Regarding claim 28, Sherman in view of Ibanez-Meier teaches the communications stations comprise communication satellites. (Sherman Fig. 1 [22, 24 & 26])

Regarding claim 29, Sherman in view of Ibanez-Meier teaches the communications stations are part of one or more terrestrial cellular networks. (Sherman Col. 4 lines 17-31)

Regarding claim 30, the limitations of claim 30 are rejected as being the same reasons set forth above in claim 1.

11. Claim 11 is rejected under 35 U.S.C. 103(a) as being unpatentable over Sherman in view of Ibanez-Meier as applied to claim 1 above, and further in view of Rydbeck et al. (US-5,930,718 hereinafter, Rydbeck).

Regarding claim 11, Sherman in view of Ibanez-Meier teaches the limitations of claim 1 above, but differs from the claimed invention by not explicitly reciting a display device operably interconnected to the communications device.

In an analogous art, Rydbeck teaches a display device connected to a satellite phone. (Col. 6 lines 39-53) At the time the invention was made, it would have been obvious to one of ordinary skill in the art to implement the communication device of Sherman in view of Ibanez-Meier after modifying it to incorporate the display for a satellite phone of Rydbeck. One of ordinary skill in the art would have been motivated to do this since having a display allows for viewing the data that is downloaded through the communication link and for viewing alerts. (Col. 6 lines 39-53 and Col. 11 lines 26-29)

12. Claims 14 and 26 are rejected under 35 U.S.C. 103(a) as being unpatentable over Sherman in view of Ibanez-Meier as applied to claim 1 above, and further in view of Lin et al. (US 2002/0114398 hereinafter, Lin).

Regarding claim 14, Sherman in view of Ibanez-Meier teaches the limitations of claim 1 above, but differs from the claimed invention by not explicitly reciting information pertaining to scintillation caused by multipath or ionospheric effects.

In an analogous art, Lin teaches determining link quality with information that includes scintillation information pertaining to scintillation caused by multipath or ionospheric effects. (Page 1 [0007], Page 2 [0017] and Page 5 [0052]) At the time the invention was made, it would have been obvious to one of ordinary skill in the art to implement the method of determining communication link quality of Sherman in view of Ibanez-Meier after modifying it to incorporate the scintillation information of Lin. One of ordinary skill in the art would have been motivated to do this since UHF satellite uplinks are susceptible to fading and scintillation.

Regarding claim 26, the limitations of claim 26 are rejected as being the same reason set forth above in claim 14.

13. Claim 15 is rejected under 35 U.S.C. 103(a) as being unpatentable over Sherman in view of Ibanez-Meier as applied to claim 1 above, and further in view of Gilmore et al. (US-5,835,847 hereinafter, Gilmore).

Regarding claim 15, Sherman in view of Ibanez-Meier teaches a method that includes modeling changes in the transmission power (Sherman Col. 20 lines 53-62), but differs from the claimed invention by not explicitly reciting providing the communications device with a means for adjusting a transmission power of the communications device.

In an analogous art, Gilmore teaches a system and method for a low earth orbiting satellite communications system that includes providing the communications device with a means for adjusting a transmission power of the communications device. (Gilmore [Abstract]) At the time the invention was made, it would have been obvious to one of ordinary skill in the art to implement the communication system of Sherman in view of Ibanez-Meier after modifying it to incorporate the adjusting of transmission power of Gilmore. One of ordinary skill in the art would have been motivated to do this since keeping the transmitting power low enables for a greater number of simultaneous transmissions. (Col. 2 lines 44-56)

14. Claim 27 is rejected under 35 U.S.C. 103(a) as being unpatentable over Sherman in view of Ibanez-Meier as applied to claim 20 above, and further in view of Duggan (US-4,776,035).

Regarding claim 27, Sherman in view of Ibanez-Meier teaches determining communication link quality employing beacon signals of claim 20, but differs from the claimed invention by not mentioning sequentially determining the link qualities.

In an analogous art, Duggan teaches of a processor that is programmed to sequentially determine the link qualities. (Col. 12 line 63 through Col. 13 line 9) At the time the invention was made, it would have been obvious to one of ordinary skill in the art to implement the communication system of Sherman in view of Ibanez-Meier after modifying it to incorporate the sequentially determined link qualities of Duggan. One of ordinary skill in the art would have been motivated to do this since multitasking with a

processor requires more power and memory, which would drive up costs of the invention.

15. Claims 31 and 32 are rejected under 35 U.S.C. 103(a) as being unpatentable over Sherman in view of Ibanez-Meier as applied to claim 1 and 20 above, and further in view of the Applicant's admitted prior art, Dybdal et al. (US-5,781,845 hereafter, Dybdal).

Regarding claim 31, Sherman in view of Ibanez-Meier teaches the limitations of claims 1 and 20, including multipath considerations (Sherman Col. 6 lines 19-37), but differs from the claimed invention by not mentioning estimating values of time delay components resulting from multipath.

In an analogous art, Dybdal teaches using weighting values for time delays in equalization for a plurality of antenna elements. (Col. 8 lines 30-51) At the time the invention was made, it would have been obvious to one of ordinary skill in the art to implement the communication system of Sherman in view of Ibanez-Meier after modifying it to incorporate the time delays of Dybdal. One of ordinary skill in the art would have been motivated to do this since weighting values for time delay can reduce the signal degradation of reflections. (Col. 4 lines 58-18)

Allowable Subject Matter

16. Claims 16-19 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Conclusion

17. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Matthew C. Sams whose telephone number is (571)272-8099. The examiner can normally be reached on M-F 7:30-5.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Lester Kincaid can be reached on (571)272-7922. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

MCS
8/13/2007

LESTER G. KINCAID
SUPERVISORY PRIMARY EXAMINER